

Curriculum Vitae

Jeffrey D. Hyman

Applied Mathematician
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Formal Education

Student 2009-Present M.S. 2010	PhD. Program in Applied Mathematics at the University of Arizona University of Arizona Major: Applied Mathematics
Post-Baccalaureate 2008-2009 B.A. 2007	Portland State University, Portland, Oregon St. Olaf College Northfield, Minnesota Majors: Mathematics, Ancient Studies, and Religion
Diploma 2003	Los Alamos High School, Los Alamos, New Mexico

Research Interest

I am currently interested in computational applications to subsurface flow and transport, complex dynamical systems, numerical solutions to PDEs with varying characteristic scales, and uncertainty quantification, computational percolation theory. I have a particular interest in numerical applications to stochastic subsurface hydrology in the case of aquifer properties and discrete fracture networks. Currently I am working with Dr. C. L. Winter to model fluid flow in porous media and connecting microscopic length scales to macroscopic properties of fluid flow.

Expertise

Programming Languages: Proficient in C, MatLab, Python, Mathematica, and \LaTeX . Competent in Fortran 77, Fortran 90/95, Maple, and R.

Operating Systems : Mac OS X, Windows, Unix, and Linux

Publications

1. C. Wang, J.D. Hyman, A. Percus, R. Caflisch 2008 "Parallel Tempering for the Traveling Salesman Problem" *International Journal of Modern Physics C*,
2. J. D. Hyman, P. Smolarkiewicz, and C. L. Winter "Scale-Invariant Estimates for Permeabilities of Porous Media" *In Preparation*
3. J. D. Hyman, Gable, C. W. Painter, S. L. "Automated Meshing of Stochastically Generated Discrete Fracture Networks" *In Preparation*
4. J. D. Hyman, C.L. Winter " Tortuosity and Porosity in Three Dimensions" *In Preparation*

Conferences and Presentations

1. Fall 2011 Invited Speaker : Recent Progress of Waves Processes in Nature, Presented : *Automated Meshing of Stochastically Generated Discrete Fracture Networks*
2. Fall 2010 University of Arizona Applied Mathematics Second Year RTG conference: Presented *Pores resolving simulation of Darcy flows*
3. Fall 2010 University of Arizona Program in Applied Mathematics Brown Bag Series: *The Difficulties of numerically solving the Stokes Equations in a porous medium*
4. Fall 2010 University of Arizona Graduate Mathematics Colloquium: Presented *Parallel Tempering, Simulated Annealing, and the Traveling Salesman Problem*
5. Spring 2010 University of Arizona's Applied Mathematics First Year RTG conference: Presented *Modeling Stokes Flow in a Random Porous Media*
6. Fall 2009 University of Arizona's Applied Mathematics First Year Lab Mini-symposium: Presented *Oscillating fluid on a spinning rod* with B. P. Berman and T. Sherman

Service, Awards, and Societies

2011 - Present	Member of AGU <i>American Geophysical Union</i>
5/2011 - Present	University of Arizona. SIAM Student Chapter President
9/2010 - Present	Member of SIAM <i>Society for Industrial and Applied Mathematics</i>
Spring 2011	Mentored Undergraduate Mathematical Modeling Group
2010-2011	Served on various panels to discuss graduate school with undergraduate scholars and first generation students at the University of Arizona
07/2009-05/2010	Awarded NSF VIGRE Fellowship
02/2006	Admitted to $E\Sigma\Phi$: The National Honorary Collegiate Society for Classical Studies
11/2005	Grant Recipient of the Lilly Endowment to observe Urban Ministry in New York City

Employment

09/2010- Present	Research Assistant University of Arizona
01/2008 - 09/2010	Watershed Sciences: Remote Sensing Analyst & Software Development Developing software that address the various issues arising during processing of LiDAR (Light Detection and Ranging) data. Including normalizing intensity values, identification of building footprints, and construction of ground model via statistical methods, spatial reasoning, and sensitivity analysis.
09/2007 - 05/2009	Portland Rock Gym: Instructor & Course Setter Instructing classes ranging from introduction to climbing to advanced techniques. Responsibility for creating new and interesting routes on a regular basis.
06/2006-08/2006	UCLA Department of Mathematics Research experience for undergraduates with the UCLA Department of Mathematics during the summer of 2006. Working with Dr. Russ Caflisch, we compared simulated annealing and parallel tempering on the traveling salesman problem.